Electronic Version

Stylesheet Version v1.1.1

Converging Error-Recovery for Multi-Bit-Incrementing Gray Code

Abstract

An L-bit gray-code input value can change by more N bits at a time. The lower N bits of the input are stored as a received least-significant-bits (LSB) while the upper bits are stored as a received most-significant-bits (MSB). A stored register holds the corrected, stored MSB and LSB for use by the receiver. When the received and stored MSB's mis-match, the new MSB is stored and the stored LSB is generated so that the stored register contains the smallest pos-sible value with the new MSB. When the received and stored MSB's match, the full L bits are compared. When the received word is larger than the stored word, the largest mis-matching bit in the LSB is found, and bits above this are copied from the received LSB to the stored register, while lower bits are generated to produce the lowest value. Repeating the process converges the result.